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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,037	02/18/2005	Masashi Miyazaki	000560-00128	5678

27557 7590 10/18/2006

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WASHINGTON, DC 20037

EXAMINER

ARBES, CARL J

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/525,037	Applicant(s) MIYAZAKI ET AL.	
	Examiner C. J. Arbes	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>herein</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restriction

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1-3, drawn to a multilayer printed wiring board, classified in class 174.

Group II, claims 4-6, drawn to a method of making a multilayer printed wiring board, classified in class 29.

2 The inventions listed in Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons, the special technical feature of Group I include an interstitial via hole structure which electrically interconnect a conductor circuit of a base layer or adjacent layer. In contrast, the special technical feature of Group II includes the process step of bonding a metallic foil having electrical conductivity on one side of a sheet-like support substrate, a step of forming metallic conductor pieces and a step of transferring metallic conductor pieces.

During a telephone conversation with Evan Smith (Reg. No. 35,863) on 16 August 2006 a provisional election was made without traverse to prosecute the invention of Group II, claims 4-6. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-3 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

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application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

An Office Action on the merits of claims 4-6 follows.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants recite , for example, in claim ... substrate and supports a possible exfoliation. ... ; ...forms metallic conductor pieces... ; ... transfers said metallic conductor pieces... ; ... which exfoliates said support substrate after said third process. In claim 5 Applicants recite ...of at least said metallic pieces in contact... . In claim 6 Applicants recite ... performed on said metal conductor pieces...; and ... with a low-temperature diffusion metal... . The Office is at a loss to comprehend the meaning which Applicants intend and the scope and metes and bounds of the now-claimed invention. Either Applicants rewrite each of these claims or fully and completely explain what is meant by each of the above alluded to instances of unclarity, vagueness and indefiniteness. For each of the above noted most unclear and indefinite phrases perhaps Applicants will notice the Office specifically where in the Specification are the intended meanings which are attached to Applicants' vague and indefinite sentence phrases so that the Office can glean what Applicants intend to claim as their invention.

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Claims 4-6, assuming the claims are clear and are definite, are further are further rejected under 35 U.S.C. 103(a) as being unpatentable over Japan Pat. No. 10-022639, by Teiichi et al; hereinafter Teiichi et al.

Teiichi et al teach a process for making multilayered printed wiring board. A through hole is provided whereat a metallic foil e.g. Copper can be placed. The foil is electrically connected to the outer layer circuitry. A roughening or etching step is performed on the surface of the foil. (Cf. Col. 22 in original Japanese document). It would have been obvious to form and transfer the foil a conductive pattern in the through hole given the teaching of Teiichi et al. (Although Teiichi et al appears to be silent re as to whether the foil is exfoliated it would appear that the foil is exfoliated inasmuch as Teiichi et al do teach that metallization of inner walls of the through hole is provided (Cf Col 0020 in the Japanese document). As applied to claim 6 it is held to have been obvious to use a low temperature (with low mp) e.g Sn or Pb or their alloys to coat the “metallic pieces”

Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. J. Arbes whose telephone number is 571-272-4563. The examiner can normally be reached on M, T , R and F from 8 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Vo, can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



C. J. Arbes
Primary Examiner
Art Unit 3729